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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/776,797	02/11/2004	Gregory Grabowski		4885

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EXAMINER	
SHEN, WU CHENG WINSTON	
ART UNIT	PAPER NUMBER
1632	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/776,797	GRABOWSKI ET AL.	
	Examiner	Art Unit	
	WU-CHENG Winston SHEN	1632	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *21 May 2008*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *37-65* is/are pending in the application.

4a) Of the above claim(s) *37-50 and 62-65* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *51-61* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *14 June 2004 and 11 February 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. A request for continued examination (RCE) under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on May 21, 2008 has been entered.

Claims 1-36 and 66-68 were cancelled. Claims 37-65 are pending.

Claims 37-50 and 62-65 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected invention, there being no allowable generic or linking claim.

Claims 51-61 are amended and currently under examination.

Claim Objection

2. Claim 57 is objected to under 37 CFR 1.75 as being a substantial duplicate of claim 52. When two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a slight difference in wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim. See MPEP § 706.03(k).

Claim 52 reads as follows: The method of claim 51 wherein the cells harboring the vector secrete the biologically active lysosomal acid lipase which is capable of being taken up by other cells deficient in lysosomal acid lipase.

Claim 57 reads as follows: The method of claim 51 wherein the cells harboring the vector secrete biologically active lysosomal acid lipase which is capable of being taken up by other cells deficient in lysosomal acid lipase.

It is noted that the only difference between claims 52 and 57 is that line 2 of claim 52 recites "the biologically active lysosomal acid lipase" whereas line 2 of claim 57 recites "biologically active lysosomal acid lipase". The claimed subject matter of claims 52 and 57 are identical.

Claim Rejection - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention.

3. Previous rejections of claims 51-55 under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention as listed below are ***withdrawn*** because the claims have been amended.

Claim 54 has been amended and no longer recites the limitation "showing biological activity *similar to* that of lysosomal acid lipase".

Claim 55 has been amended and no longer recites "substitution of amino acid Pro (-6) to Thr and Gly2 to Arg".

Claim 51 has been amended and no longer recites the phrase "wherein the sequence contains the catalytic lipase triad Asp-Ser-His". It was noted that since there is insufficient antecedent basis for this limitation, and the phrase "catalytic lipase triad Asp-Ser-His" is unclear

in terms of the order of these three amino acid residues with respect to N-terminus and C-terminus of the lipase polypeptide, and whether these three amino acid residues are in consecutive order or not. Claims 52-55 depend from claims 51.

Claim Rejection - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Written description

4. Previous rejection of claims 51-55 and 57-61 under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention, is ***withdrawn*** because the claims have been amended.

Claims 51-61 have been amended and no longer recite (i) "biologically active lipid hydrolyzing protein or polypeptide", (ii) "a protein having at least 85% sequence homology to lysosomal acid lipase", and (iii) "or mixtures thereof".

It is noted that genes encoding the claimed "lysosomal acid lipase" have been cloned from multiple murine species and humans.

5. Claim 56 as amended remain rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Previous rejection of claim 56 is ***maintained*** for the reasons of record advanced on pages 4-7 of the office action mailed on 03/07/20007, and further discussed on pages 7-10 of the office action mailed on 11/21/2007.

The Examiner notes that claim 56 as amended continues to recite "lipid hydrolyzing proteins or polypeptides", which is a genus of proteins or polypeptides of which Applicant did not have possession at the time the application was filed. Discussions in this regard have been documented on pages 5-6 of the office action mailed on 03/07/20007, and further elaborated on pages 7-8 of the office action mailed on 11/21/2007.

New Matter

6. Claim 56 is rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. *This rejection is necessitated by claim amendments filed on 05/21/2008.*

37 CFR 1.118 (a) states that "No amendment shall introduce new matter into the disclosure of an application after the filing date of the application".

The amended claim 56 contains the limitation "further comprising the administration of exogenously produced lipid hydrolyzing proteins or polypeptides, contained in a pharmaceutically acceptable carrier". As amended, claim 56 requires administration of (i) DNA

encoding lysosomal acid lipase and (ii) lipid hydrolyzing proteins or polypeptides to athermatous plaque cells or cells or liver, as claim 56 is a dependent claim of 53, which in turn depends from claim 51. The specification discloses various routes for administration of either lysosomal acid lipase or administration of nucleic acid encoding lysosomal acid lipase (See paragraphs [0053], [0059]-[0062], and [0065], US 2004/0223960, publication of instant application). The specification does not provide support for a method comprising administration of (i) DNA encoding lysosomal acid lipase and (ii) lipid hydrolyzing proteins or polypeptides to athermatous plaque cells or cells or liver, as required by claim 56.

MPEP 2163.06 notes, "If new matter is added to the claims, the examiner should reject the claims under 35 U.S.C. 112, first paragraph - written description requirement. In re Rasmussen, 650 F.2d 1212, 211 USPQ 323 (CCPA 1981)." MPEP 2163.02 teaches that "Whenever the issue arises, the fundamental factual inquiry is whether a claim defines an invention that is clearly conveyed to those skilled in the art at the time the application was filed. If a claim is amended to include subject matter, limitations, or terminology not present in the application as filed, involving a departure from, addition to, or deletion from the disclosure of the application as filed, the examiner should conclude that the claimed subject matter is not described in that application. MPEP 2163.06 further notes "When an amendment is filed in reply to an objection or rejection based on 35 U.S.C. 112, first paragraph, a study of the entire application is often necessary to determine whether or not "new matter" is involved. Applicant should therefore specifically point out the support for any amendments made to the disclosure".

Enablement

7. Previous rejection of claims 51-55 and 57-61 under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement, as the claim(s) contains subject matter, which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention, is ***withdrawn*** because the claims have been amended.

Claims 51-61 have been amended and no longer recite (i) "biologically active lipid hydrolyzing protein or polypeptide", (ii) a protein having at least 85% sequence homology to lysosomal acid lipase", and (iii) "or mixtures thereof". The scope of amended claims 51-61 encompasses a method of providing biologically active lysosomal acid lipase *in vitro* as well as *in vivo*.

Applicant's arguments that for the claimed methods there is no requirement that any effective treatment is accomplished (See third paragraph, page 9 of Applicant's response filed on 05/21/2008) has been fully considered. The Examiner agrees with Applicant's arguments that the claimed methods as written are not directed to methods of treating a disease. Relevant to this consideration, the status of art supports that the expression of a transgene by transfecting a cell either *in vitro* or *in vivo* is enabled. Specifically, post-filing art by Du et al. discloses that correction of lipid storage by adenovirus-mediated gene transfer in mice is enabled (Du et al. Lysosomal acid lipase deficiency: correction of lipid storage by adenovirus-mediated gene transfer in mice. *Hum Gene Ther.* 13(11):1361-72, 2002). In light of claim amendments and upon further consideration, the lack of enablement rejection is withdrawn.

Priority

As documented on page 16 of the Final office action mailed on 11/21/2007, this application 10/776,797 filed on 02/11/2004 is a DIV of 09/775,517 02/02/2001 PAT 6,849,257 which claims benefit of 60/180,362 filed 02/04/2000. It has been noted that the claims of instant application recites administration into cells a vector comprising and expressing a DNA sequence encoding either biologically active lipid hydrolyzing protein or polypeptide (claim 51) or biologically active lysosomal acid lipase (claim 56). The provisional application 60/180,362 filed on 02/04/2000 disclosed administration of enzyme into cells, a protein therapy; however, the application 60/180,362 did not disclose administration of DNA sequences encoding said enzyme. In this regard, 09/775,517 filed 02/02/2001 (now U.S. Patent No: 6,849,257) did disclose vectors expressing proteins. Therefore, the priority of instant application can be dated back to 02/02/2001.

However, as documented on page 17 of the Final office action mailed on 11/21/2007, Applicant filed Declaration under 37 C.F.R 1.131 on 08/07/2007 asserting that the conception and reduction to practice of the claimed invention dated prior to January 25, 2001, which is the effective filing date of withdrawn 102(e) rejection anticipated by Kapeller-Libermann et al. (See pages 19 of the Final office action mailed on 11/21/2007). Accordingly, January 25, 2001 is the priority date of the claims 51-61 currently under examination.

Claim Rejection - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language

Claim interpretations: The limitation "lysosomal acid lipase which is capable of being taken up by other cells deficient in lysosomal acid lipase" recited in claims 52 and 57 are considered as inherent properties of the recited lysosomal acid lipase, which imparts no patentable weight. The "virus-like vectors" recited in claim 59 encompass any viral vector as the specification does not define what vectors are considered as virus-like vectors. The limitation "the vector is a lipid vesicle" recited in claim 61 is interpreted as "the vector further comprises a lipid vesicle". These claim interpretations are applicable to the following 102(b) and 103(a) art rejections.

8. Claims 51, 52, 57, and 60 are rejected under 35 U.S.C. 102(b) as being anticipated by **Anderson et al.** (Anderson et al., Lysosomal acid lipase mutations that determine phenotype in Wolman and cholesterol ester storage disease. *Mol Genet Metab.* 68(3):333-45, 1999) as evidenced by Du et al. (Du et al. Lysosomal acid lipase deficiency: correction of lipid storage by adenovirus-mediated gene transfer in mice. *Hum Gene Ther.* 13(11):1361-72, 2002).

Anderson teaches DEAE-dextran mediated transfection of plasmid vectors containing hLAL (human lysosomal acid lipase, also known as cholesterol ester hydrolase/cholesterol esterase) cDNA inserts into COS-1 cells, and the enzymatic activities of wild type hLAL and various mutated hLAL were analyzed (See Material and Methods, page 334, and Figure 6, Anderson et al., 1999).

With regard to the limitation LAL being a secreted protein as recited in claims 52 and 57, the limitation is considered as inherent properties of the recited lysosomal acid lipase. This is evidenced by Du et al., 2002 because Du et al. 2002 teaches that LAL secreted by hepatocytes is taken up by Kupffer cells, the macrophages lining the walls of hepatic sinusoids (See second paragraph, right column, page 1364, Du et al., 2002).

Thus, Anderson et al. (1999) clearly anticipates claims 51, 52, 57, and 60, of instant invention.

9. Claims 51, 52 and 57-59 are rejected under 35 U.S.C. 102(b) as being anticipated by **Du et al.** (Du et al., Molecular and enzymatic analyses of lysosomal acid lipase in cholesteryl ester storage disease. *Mol Genet Metab.* 64(2):126-34, 1998) as evidenced by Du et al. (Du et al. Lysosomal acid lipase deficiency: correction of lipid storage by adenovirus-mediated gene transfer in mice. *Hum Gene Ther.* 13(11):1361-72, 2002).

Du et al. teaches that the coding region of hLAL generated by polymerase chain reaction was cloned in a baculovirus vector pVT-Bac and transfected into Sf9 insect cells, and hLAL expression was monitored in cell lysates and medium by immunoblot analysis and enzyme assays at 72-h post-transfection with pure recombinant virus.

With regard to the limitation LAL being a secreted protein as recited in claims 52 and 57, the limitation is considered as inherent properties of the recited lysosomal acid lipase. This is evidenced by Du et al., 2002 because Du et al. 2002 teaches that LAL secreted by hepatocytes is taken up by Kupffer cells, the macrophages lining the walls of hepatic sinusoids (See second paragraph, right column, page 1364, Du et al., 2002).

Thus, Du et al. (1998) clearly anticipates claims 51, 52, and 57- 59 of instant invention.

10. Claims 51, 52, 57-59, and 61 are rejected under 35 U.S.C. 102(b) as being anticipated by **Sheriff et al.** (Sheriff et al., Characterization of lysosomal acid lipase by site-directed mutagenesis and heterologous expression. *J Biol Chem.* 270(46):27766-72, 1995) as evidenced by Du et al. (Du et al. Lysosomal acid lipase deficiency: correction of lipid storage by adenovirus-mediated gene transfer in mice. *Hum Gene Ther.* 13(11):1361-72, 2002).

Sheriff et al. teaches that the coding region of hLAL generated by polymerase chain reaction was cloned in a baculovirus vector, liposomes were used for initial cotransfections into Sf9 insect cells, and hLAL expression was monitored in cell lysates and medium by immunoblot analysis and enzyme assays at 72-h post-transfection with pure recombinant virus.

With regard to the limitation LAL being a secreted protein as recited in claims 52 and 57, the limitation is considered as inherent properties of the recited lysosomal acid lipase. This is evidenced by Du et al., 2002 because Du et al. 2002 teaches that LAL secreted by hepatocytes is taken up by Kupffer cells, the macrophages lining the walls of hepatic sinusoids (See second paragraph, right column, page 1364, Du et al., 2002).

Thus, Sheriff et al. (1995) clearly anticipates claims 51, 52, 57- 59, and 61 of instant invention.

Claim Rejection - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

11. Claims 51 and 53-55 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Anderson et al.** (Anderson et al., Lysosomal acid lipase mutations that determine phenotype in Wolman and cholesterol ester storage disease. *Mol Genet Metab.* 68(3):333-45, 1999) in view of **Bureau et al.** (US PGPUB 2002/0012914, publication date 01/31/2002).

Anderson et al. teaches DEAE-dextran mediated transfection of plasmid vectors containing hLAL (human lysosomal acid lipase, also known as cholesterol ester hydrolase/cholesterol esterase) cDNA inserts into COS-1 cells, and the enzymatic activities of wild type hLAL and various mutated hLAL were analyzed (See Material and Methods, page 334, and Figure 6, Anderson et al., 1999).

Anderson et al. does not teach **(i)** transfected cells are atheromanous plaque cells or cells of liver as recited in claim 53, and **(ii)** the vector is introduced to the cells in vivo as recited in claim 55.

However, Bureau et al. teaches that lysosomal acid lipase is a gene associated with lysosomal deficiency in liver metabolism (See paragraphs [0009] and [0074]). Bureau et al. specifically teaches **(i)** transfection of plasmid DNA or viral vector alone or in combination with agents vectors in a composition comprising pharmaceutical acceptable excipients into liver tissue (See paragraphs [0002], [0009], [0024], and claim 19), and **(ii)** an improved method for enhancing electro-transferring nucleic acids that encode therapeutic proteins such as enzymes, cytokines, and hormones, what are the protein products? into multi-celled eukaryotic organism cells *in vivo* and *in vitro* (See abstract and paragraphs [0001], [0039]-[0045], Example 10, Bureau et al., 2002).

Therefore, it would have been *prima facie* obvious to one having ordinary skill in the art at the time of the invention to combine the teachings of Anderson et al. regarding transfection of vectors containing hLAL into COS-1 cells with the teachings of Bureau et al. regarding improved methods for transferring nucleic acids combined with protein products into multi-celled eukaryotic organism cells, such as liver cells that metabolize lipids involving enzymatic activity of LAL, to arrive at the claimed methods for providing biologically active lysosomal acid lipase in liver cells either *ex vivo* or *in vivo* as recited in claims 53-55 of instant application.

One having ordinary skill in the art would have been motivated to combine the teachings of Anderson et al. with the teachings of Bureau et al. because the methods taught by Bureau et al. improve the efficiency for delivery of nucleic acid alone or nucleic acid combined with its encoded protein products to targeted cells both *ex vivo* and *in vivo* by electro-transfer.

There would have been a reasonable expectation of success given (i) successful transfection and expression of hLAL in COS-1 cell by the teachings of Anderson et al., and (ii)

successfully delivery of DNA encoding glycoprotein B (gB) of the human cytomegalovirus into tested animal via electro-transfer for induction of immune response to the gB protein by the teachings of Bureau et al. (See for instance, Example 9, Bureau et al.).

Thus, the claimed invention as a whole was clearly *prima facie* obvious.

12. Claims 51 and 53-55 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Sheriff et al.** (Sheriff et al., Characterization of lysosomal acid lipase by site-directed mutagenesis and heterologous expression. *J Biol Chem.* 270(46):27766-72, 1995) in view of **Bureau et al.** (US PGPUB 2002/0012914, publication date 01/31/2002).

Sheriff et al. teaches that the coding region of hLAL generated by polymerase chain reaction was cloned in a baculovirus vector, liposomes were used for initial cotransfections into Sf9 insect cells, and hLAL expression was monitored in cell lysates and medium by immunoblot analysis and enzyme assays at 72-h post-transfection with pure recombinant virus.

Sheriff et al. does not teach **(i)** transfected cells are atheromanous plaque cells or cells of liver as recited in claim 53, and **(ii)** the vector is introduced to the cells in vivo as recited in claim 55.

However, Bureau et al. teaches that lysosomal acid lipase is a gene associated with lysosomal deficiency in liver metabolism (See paragraphs [0009] and [0074]). Bureau et al. specifically teaches **(i)** transfection of plasmid DNA or viral vector alone or in combination with agents vectors in a composition comprising pharmaceutical acceptable excipients into liver tissue (See paragraphs [0002], [0009], [0024], and claim 19), and **(ii)** an improved method for enhancing electro-transferring nucleic acids that encode therapeutic proteins such as enzymes,

cytokines, and hormones, into multi-celled eukaryotic organism cells *in vivo* and *in vitro* (See abstract and paragraphs [0001], [0039]-[0045], Example 10, Bureau et al., 2002).

Therefore, it would have been *prima facie* obvious to one having ordinary skill in the art at the time of the invention to combine the teachings of Sheriff et al. regarding transfection of vectors containing hLAL into Sf9 cells with the teachings of Bureau et al. regarding improved method for transferring nucleic acids combined with protein products into multi-celled eukaryotic organism cells, such as liver cells that metabolize lipids involving enzymatic activity of LAL, to arrive at the claimed methods for providing biologically active lysosomal acid lipase in liver cells either *ex vivo* or *in vivo* as recited in claims 53-55 of instant application.

One having ordinary skill in the art would have been motivated to combine the teachings of Sheriff et al. with the teachings of Bureau et al. because the methods taught by Bureau et al. improve the efficiency for delivery of nucleic acid alone or nucleic acid combined with its encoded protein products to targeted cells both *ex vivo* and *in vivo* by electro-transfer.

There would have been a reasonable expectation of success given (i) successful transfection and expression of hLAL in Sf9 cell by the teachings of Sheriff et al., and (ii) successfully delivery of DNA encoding glycoprotein B (gB) of the human cytomegalovirus into tested animal via electro-transfer for induction of immune response to the gB protein by the teachings of Bureau et al. (See for instance, Example 9, Bureau et al.).

Thus, the claimed invention as a whole was clearly *prima facie* obvious.

Conclusion

13. No claim is allowed.

Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Any inquiry concerning this communication from the examiner should be directed to Wu-Cheng Winston Shen whose telephone number is (571) 272-3157 and Fax number is 571-273-3157. The examiner can normally be reached on Monday through Friday from 8:00 AM to 4:30 PM. If attempts to reach the examiner by telephone are unsuccessful, the supervisory patent examiner, Peter Paras, can be reached on (571) 272-4517. The fax number for TC 1600 is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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/Peter Paras, Jr./

Supervisory Patent Examiner, Art Unit 1632